[0133] Suitable materials for the liquid-shrinkable string **524** include modified polyvinyl alcohol (PVA), modified cellulose fibers (e.g., cotton and rayon), such as carboxymethylated cotton, methylated cotton, ethylated cotton, hydroxyethylated cotton, sulfated cotton, sulfonated cotton, phosphated cotton, cationic cotton, amphoteric cotton, sodium acrylate-, acrylic acid-, acrylonitrile- or acrylamide-grafted cellulose fiber and crosslinked fiber thereof; wool or silk modified in the same manner as described above; modified synthetic fiber, such as a partially saponified acrylonitrile series of fiber and vinilon fiber that is partially esterified by maleic acid, carboxymethylcellulose and hydrolyzed acrylic fiber. In one particular aspect, a suitable modified PVA liquid shrinkable string can be obtained from Kuraray America, Inc. of Houston, Tex., U.S.A.

[0134] A first portion of the liquid-shrinkable string **524** is desirably attached to the barrier structure member **528** (e.g., attached to the surface of the barrier structure, or attached within the structure). In aspects where an additional barrier structure member **528** is present, a second portion of the liquid-shrinkable string **524** is attached to the additional barrier structure member **528**. However, an additional string (i.e., a separate string) can additionally or alternatively be present in the one or more of the barrier structures. Additional, or multiple, strings can each include the same material, or they can include different materials. FIG. **7** shows a top view of an article **10** of the present disclosure having two barrier structure members **528** with four separate liquid-shrinkable strings **524** attached thereto, such as with adhesive or embossing, for example. Attachment of the liquid-shrinkable string **524** can occur through suitable bonding techniques including, but not limited to, stitching, adhesive bonds, cohesive bonds, thermal bonds, ultrasonic bonds, embossing, crimping, entangling, fusing, or the like, and combinations thereof. In some aspects, such bonding can occur over the entire length of the string. However, in other desirable aspects, at least one portion only of the string **524** can be bonded, such as one or more spot welds with adhesives, for example. In some aspects, it is desirable to anchor the ends of the string **524** into the article **10** or barrier structure member **528**, while keeping the central length of the string **524** (e.g., the portion between one or more barrier structure members **528**) free from bonds to provide improved shrinkage performance.

[0135] When menstrual fluid or other bodily exudate contacts one or more points of the liquid-shrinkable string **524**, the total length of the liquid-shrinkable string **524** reduces, which creates a tension. The resulting tension pulls up the barrier structure member **528** away from the outer edge of the article **10** inwardly toward the centerline of the article **10**. In the aspect illustrated in FIG. **7**, two barrier structure members **528** are located on either side of the longitudinal-extending centerline **541** adjacent to the edges **534** of the article **10**.

[0136] When the liquid-shrinkable strings **524** are contacted by an aqueous fluid, such as urine or menses, the liquid-shrinkable string **524** shrinks, which pulls on the barrier structure members **528** and lifts them.

[0137] In alternate aspects of the present disclosure, the leakage prevention element **20** can include heat-activatable, expandable structures that have the ability to stay flat before activation, hence providing ease of manufacture, ease of packaging, and discreet storage. Upon activation, the heat-activatable, expandable structures activate and expand to the desired shape, creating embossments, barriers, channels, and/or visual patterns on or between various layers of the absorbent article, thus allowing improved control of fluid to flow on or between the layers as well as improved visual appearance. Further description of these aspects is provided in U.S. patent application Ser. No. _____, the contents of all of which are incorporated herein by reference to the extent that they are consistent (i.e., not in conflict) herewith.

[0138] When the heat-activatable, expandable structure is heated, the heat-activatable, expandable structure expands to form a walled fluid containment region that prevents fluid leakage toward the front, rear, and/or sides. In use, the heat-activatable, expandable structure will inhibit flow of fluids from the central portion of the article **10** to the side and/or end edges of the article **10**, thus inhibiting fluid leakage from the article **10**. The heat-activatable, expandable structure can form any shape that is desired. For example, in one aspect, the heat-activatable, expandable structure has a shape that generally matches the shape of the article **10**. In another aspect, the one or more heat-activatable, expandable structures can be disposed at one or more ends or sides of the article **10**.

[0139] Suitable materials for the heat-activatable, expandable structure include heat-activatable, expandable inks, such as AQUAPUFF expandable inks from Polytex Environmental Inks Ltd. of Bronx, N.Y., U.S.A. AQUAPUFF expandable inks are expandable inks that react when exposed to heat to produce a gas by-product that causes the ink to expand or "puff up." Suitable AQUAPUFF expandable inks include Puff Ink MW 4319 and MW 4404. Expandable inks can be applied using flexography, gravure, offset, inkjet (digital), curtain, knife and roll coating, silk screen, rotary screen, or any other suitable printing techniques. The printing of the inks can occur at a number of steps in the converting process, such as on an off-line printing step, or on-line during the product assembly process. Further, the ink can be printed at one process step, and expanded by heat activation at a downstream step.

[0140] The leakage prevention element **20** in each of the aspects described herein also includes a barrier highlight **21** associated with the active barrier **22**. The barrier highlight **21** is configured to change appearance when wetted to highlight the action of the active barrier **22**, making the dimension change of the active barrier **22** more perceivable to a wearer or caregiver.

[0141] In many cases, various elements of the articles described herein are white or otherwise uniform in their appearance and therefore difficult to differentiate. During use, even an active barrier **22** can be difficult for a wearer or caregiver to recognize because of little color differentiation from the surrounding materials. Providing a highlighted region in the form of a barrier highlight **21** that changes appearance under generally the same conditions that cause the active barrier **22** to change dimensions provides a visual confirmation of and therefore confidence in product functionality. Consumers are thereby aware of the functional elements (active barriers **22**) in the products and have a greater awareness of and confidence in the product performing as designed.

[0142] The barrier highlight **21** generally overlies an active barrier **22** and is in fluid communication with the absorbent assembly **60**, **160**, **260**, the active barrier **22**, or both. In this use, "overlies" means that the barrier highlight **21** is disposed on or in a layer or structure between the outer cover and the inner surface such that the barrier highlight **21** can be seen from the inside surface of the article **10** before and/or after being wetted. The barrier highlight **21** can be disposed on or in the absorbent assembly **60**, **160**, **260**, on or in the active